

CLAIMS

What is claimed is:

- 1 1. A method for sharing resources across a plurality of computing platforms,  
2 comprising:  
3 receiving a resource access request to access a shared resource at a first  
4 computing platform;  
5 determining a second computing platform via which the shared resource may  
6 be accessed;  
7 sending the resource access request to the second computing platform; and  
8 accessing the shared resource via the second computing platform.
- 1 2. The method of claim 1, wherein the plurality of computing platforms comprise  
2 a plurality of server blades operating in a blade server environment.
- 1 3. The method of claim 1, wherein the method is performed in a manner that is  
2 transparent to operating systems running on the plurality of computing platforms.
- 1 4. The method of claim 1, wherein the method is facilitated by firmware running  
2 on each of the plurality of computing platforms.
- 1 5. The method of claim 1, wherein the resource access request is sent to the  
2 second computing platform via an out-of-band (OOB) communication channel.

1 6. The method of claim 5, wherein the OOB communication channel comprises  
2 one of a system management bus, an Ethernet-based network, or a serial  
3 communication link.

1 7. The method of claim 5, wherein the target resource comprises a storage  
2 device.

1 8. The method of claim 7, wherein the resource access request comprises a  
2 storage device write request, and the method further comprises sending data  
3 corresponding to the storage device write request via the OOB communication  
4 channel.

1 9. The method of claim 7, wherein the resource access request comprises a  
2 storage device read request, and the method further comprises:  
3 retrieving data corresponding to the read request from the shared resource;  
4 and  
5 sending the data that are retrieved back to the first computing platform via the  
6 OOB communication channel.

1 10. The method of claim 1, further comprising:  
2 maintaining global resource mapping data identifying which resources are  
3 accessible via which computing platforms; and  
4 employing the global resource mapping data to determine which computing  
5 platform to use to access the shared resource.

1 11. The method of claim 10, wherein a local copy of the global resource mapping  
2 data is maintained on each of the plurality of computing platforms.

1 12. The method of claim 10, wherein the global resource mapping data is  
2 maintained by a central global resource manager.

1 13. A method for sharing a plurality of storage devices across a plurality of  
2 computing platforms, comprising:  
3 configuring the plurality of storage devices as a virtual storage volume;  
4 maintaining a global resource map that maps input/output (I/O) blocks defined  
5 for the virtual storage volume to corresponding storage devices that actually host the  
6 I/O blocks;  
7 receiving a data access request identifying an I/O block from which data are  
8 to be accessed via the virtual storage volume;  
9 identifying a computing platform via which a target storage device that  
10 actually hosts the I/O block may be accessed through use of the global resource  
11 map;  
12 routing the data access request to the computing platform that is identified;  
13 and  
14 accessing the I/O block on the target storage device via the computing  
15 platform that is identified.

1 14. The method of claim 13, further comprising:  
2 configuring the plurality of storage devices as at least one RAID (redundant  
3 array of independent disks) storage volume;  
4 maintaining RAID configuration mapping information that maps input/output  
5 (I/O) blocks defined for said at least one RAID virtual storage volume to  
6 corresponding storage devices that actually host the I/O blocks; and

7           employing the RAID configuration mapping information to access appropriate  
8 storage devices in response to read and write access requests.

1   15.   The method of claim 14, wherein the RAID virtual storage volume is  
2 configured in accordance with the RAID-1 standard.

1   16.   A method for sharing an input device across a plurality of computing  
2 platforms, comprising:  
3           routing input data generated at a first computing platform to a second  
4 computing platform, said input data generated in response to receiving an input  
5 signal produced by an input device coupled to a first computing platform; and  
6           providing the input data to an operating system running on the second  
7 computing platform;

1   17.   The method of claim 16, wherein the method is performed via firmware in a  
2 manner that is transparent to the operating system running on the second computing  
3 platform.

1   18.   The method of claim 16, wherein the input device comprises one of a  
2 keyboard and mouse.

1   19.   A method for sharing keyboard, video and mouse resources across a plurality  
2 of computing platforms, comprising:  
3           routing user input data produced at a resource host computing platform in  
4 response to user inputs via a keyboard and mouse coupled to the resource host  
5 computing platform to a target computing platform;

6 providing the user input data to an operating system running on the target  
7 computing platform;  
8 routing video data produced by an operating system running on the target  
9 computing platform to the resource host computing platform; and  
10 processing the video data at the resource host computing platform to  
11 generate a video display signal to drive a video display coupled to the resource host  
12 computing platform.

1 20. The method of claim 19, wherein the method is facilitated by firmware stored  
2 on each of the resource host and target computing platforms.

1 21. The method of claim 19, further comprising maintaining global resource  
2 mapping information identifying the resource host and the target computing  
3 platforms.

1 22. The method of claim 19, wherein the user input and video data are routed  
2 over an out-of-band communication channel.

1 23. An article of manufacture comprising a machine-readable medium having  
2 instructions stored thereon, which when executed on first and second computing  
3 platforms support sharing of keyboard, video and mouse resources coupled to the  
4 first computing platform by performing operations including:  
5 routing input data produced at the first computing platform in response to user  
6 inputs via the keyboard and mouse to a second computing platform;  
7 providing the input data to an operating system running on the second  
8 computing platform; and

9 routing video data produced by the operating system running on the second  
10 computing platform to a video signal generation component on the first computing  
11 platform.

1 24. The article of manufacture of claim 23, wherein the instructions comprise  
2 firmware instructions.

1 25. The article of manufacture of claim 23, wherein the article comprises a flash  
2 device.

1 26. The article of manufacture of claim 23, wherein the operations are performed  
2 in a manner that is transparent to the operating system running on the second  
3 computing platform.

1 27. A blade server system, comprising:

2 a chassis, including a plurality of slots in which respective server blades may  
3 be inserted;

4 an interface plane having a plurality of connectors for mating with respective  
5 connectors on inserted server blades and providing communication paths between  
6 the plurality of connectors to facilitate in out of band (OOB) communication channel;  
7 and

8 a plurality of server blades, each including a processor and firmware  
9 executable thereon to perform operations including:

10 receive a resource access request from an operating system running  
11 on a requesting server blade to access a shared resource hosted by at least  
12 one of the plurality of server blades;

13                   determining a target resource host from among the plurality of server  
14                   blades that hosts a target resource that may service the resource access  
15                   request;  
16                   sending the resource access request to the target resource host; and  
17                   accessing the target resource via the target resource host to service  
18                   the resource access request.

1   28.    The blade server system of claim 27, wherein the operations are performed in  
2   a manner that is transparent to operating systems that may be run on the plurality of  
3   server blades.

1   29.    The blade server system of claim 27, wherein communications between the  
2   plurality of server blades is facilitated by an out-of-band OOB communication  
3   channel.

1   30.    The blade server system of claim 29, wherein each processor supports a  
2   hidden execution mode that is employed for facilitating communication via the OOB  
3   channel.